92nd LCA Discussion Forum

AI in LCA: Innovations, Applications, and Challenges

Thursday, Thursday, 26 February 2026
Location: **ETH Zurich, Alumni Pavillon (ETH Main Campus)**

The official language of this event is English

Artificial Intelligence (AI) is transforming science, business, and sustainability assessment. In the field of Life Cycle Assessment (LCA), AI promises faster data generation, improved model quality, and advanced predictive capabilities — but also raises new questions about transparency, bias, and reproducibility. This LCA Forum will explore how machine learning, natural language processing (NLP), and large language models (LLMs) are reshaping LCA research and practice. We will discuss emerging applications, methodological challenges, data quality and its control and ethical considerations. We finally aim at outlining a roadmap for integrating AI into mainstream LCA workflows.

The presentations will explore the role of AI within LCA, covering multiple aspects of LCI, LCIA, reporting, and review processes. They will also provide insights into its application in the field of Social Life Cycle Assessment. A significant amount of time is dedicated to discussions and we will have a breakout group session to synthesize the knowledge and identify challenges and opportunities in this highly dynamic area at the end of the forum.

We look forward to welcoming you at ETH Zurich.

Stephan Pfister and Shuntian Wang, ETH Zurich

Dachuan Zhang, NUS Singapore

Giuseppe Cecere, Ecoinnovazione

Preliminary Programme (as of January 20, 2026)

Time	Working Title	Speaker [Chair]
9:00	Welcome and introduction	Stephan Pfister, ETH
	AI general Challenge and use in LCA	**[Giuseppe Cecere]**
9:10	Lessons learned from ACLCA workshop on AI in LCA	Sangwon Suh, Tsinghua University
9:30	Artificial intelligence in LCA: technical, ethical, and organizational reflections (UNEP Life Cycle Initiative)	Manish Kumar, KIT
9:50	AI in Daily LCA Consulting Practice: Opportunities, Risks, and Practical Applications	Nils Jungbluth / Angelo Stefanel (ESU Service)
10:10	Discussion	
10:20	**Coffee Break**	
	LCI Data modeling	**[Dachuan Zhang]**
10:50	AI-assisted LCA database development: the TianGong experience	Ming Xu, Tsinghua University*
11:10	LCA Data Quality and the Advent of Artificial Intelligence	Achille Laurent, Ecoinvent
11:30	Why AI will never predict environmental impacts only from the molecular structure of a product and how we can still do it	Tim Langhorst, Carbonminds
11:50	Machine Learning and AI for building stock models	Deepika Raghu, ETH
12:10	Discussion	
12:25	**Lunch Break**	
	Short presentations	**[Shuntian Wang]**
13:30	EcoSemantic, the First AI-Native Platform for Sustainability Analysis	Carlos Gaete
13:40	Structured evaluation process for assessing LLM quality performance in a LCA context	Julien Pedneault / Laure Patouillard*, CIRAIG
13:50	AI for assessing biochar application	Maria Myridanis, ETH
	Beyond LCI and LCIA	**[Dachuan Zhang]**
14:05	Utilizing AI for S-LCA	Carolyn Cole, VTT
14:25	AI-powered tool for footprinting	Christie Walker / Jakob Tresch, Niatsu
14:45	AI-Powered Product Lifecycle Intelligence	Fabian Hassel, Makersite
15:05	Discussion	
15:15	**Coffee break**	
	Break out discussions	**[Stephan Pfister]**
15:45	Current use cases / Main challenges / Future needs[SP4]	all
16:25	Reporting back, overarching dicussion	session leads
16:35	Summary framing of outcomes	all
16:55	Wrap up of AI DF and Outlook to Automation DF	Stephan Pfister
17:00	Farewell	Dachuan Zhang
17:05	**End of 92nd LCA Forum**	

*online

Practical information

Please use the following link for registration:

https://ethzurich.eventsair.com/lca2026/registration

To register you need to create a profile, which is done in very few steps and is self-explanatory. In case you are not able to pay by credit card, please send an e-mail to: lcaforum@ethz.ch with a short notice that you want to receive an invoice instead. Please provide the full invoice address as well as the chosen fee type.

Also for any further questions about the registration process, please do not hesitate to contact: lcaforum@ethz.ch

Lunch

Vegetarian lunch will be served close to the location. Vegan options are always on offer.

Location

The DF will take place in the **GEP Pavillion**, at Campus ETH Zentrum, ETH Zurich, Rämistrasse 101, 8092 Zurich (see map below). From the main train station, cross the river Limmat and use the "Polybahn" cable car.

For further information, please contact Barbara Dold: lcaforum@ethz.ch